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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
3600: Research, Development, Test & Evaluation, Air Force I BA 6: RDT&E Management Support					PE 0605976F I Facilities Restoration and Modernization - Test and Evaluation Support							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	134.111	135.507	162.216	0.000	162.216	88.445	69.293	70.730	72.019	Continuing	Continuing
6606MC: Facility Restoration and Modernization - T&E	-	134.111	135.507	162.216	0.000	162.216	88.445	69.293	70.730	72.019	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Restoration includes repair and replacement work to restore damaged facilities due to accident or failure attributable to inadequate sustainment, excessive age, or other causes. Modernization includes alteration of facilities to implement a new, higher standard (including regulatory changes), to accommodate new functions, or to replace building components that typically last more than 50 years (such as foundations and structural components). Other tasks associated with facilities operations (such as custodial services, grass cutting, and the provision of central utilities) are not included. These restoration/modernization funds support the following Air Force test organizations and their associated test and evaluation facilities, including: remote locations, the 96th Test Wing (TW) at Eglin AFB, FL, Arnold Engineering and Development Complex (AEDC) at Arnold AFB, TN, including AEDC's 704th Test Group (TG) at Holloman AFB, NM, 704 TG Landing Gear Test Facility (LGTF) at Wright-Patterson AFB, OH, AEDC's Hypersonic Wind Tunnel 9 at White Oak, MD, AEDC's National Full-Scale Aerodynamics Complex (NFAC) at Moffett Field, CA, AEDC's McKinley Climatic Lab (MCL) at Eglin AFB, FL, and the 412th TW at Edwards AFB, CA.

This program is in Budget Activity 6, RDT&E Management Support because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

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B. Program Change Summary (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	134.111	135.507	125.437	0.000	125.437
Current President's Budget	134.111	135.507	162.216	0.000	162.216
Total Adjustments	0.000	0.000	36.779	0.000	36.779
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	36.779	0.000	36.779

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<u>Change Summary Explanation</u> FY19: \$36.779 million increase due to \$25.000 million increase for restoration and modernization repairs to MCL, \$3.000 million increase for the ARC Hypersonics Project, and \$10.000 million increase for restoration and modernization repairs to National Full-Scale Aerodynamics Complex (NFAC) due to infrastructure failures, offset by a \$1.221 million decrease to inflation adjustment for ongoing Service Life Extension Projects (SLEP).				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019
Title: Facility restoration and modernization at the 96 TW Description: Facility restoration and modernization at the 96th TW. FY 2018 Plans: Projected repairs include fire suppression system and structural repair at the 300' Tower, Hanger 71 switchboard and panel feeds, wash racks, pole barns, electrical feeds and pads at test sites. FY 2019 Plans: Continue Restoration and Modernization (R&M) efforts across the range complex including storm water drainage, fencing & paving, Heating, Ventilation, and Air Conditioning (HVAC) repair/replacement, water system upgrades and lightning protection. FY 2018 to FY 2019 Increase/Decrease Statement: \$2.15 million increase from FY 2018 to FY 2019 due to preventing future capability failures from infrastructure.		11.267	3.047	5.197
Title: Facility restoration and modernization at AEDC Description: Facility restoration and modernization at AEDC. FY 2018 Plans: Continue execution of the four AEDC SLEPs initiated in FY 2017 to restore and modernize the Propulsion Wing Tunnel (PWT), Von Karman Facility (VKF), and Engine Test Facility (ETF) infrastructure (Medium Turbine Engine A&B Plant and the Large Turbine Engine C-Plant mechanical systems, control valves, electrical systems, temperature controls and automate the control systems) at Arnold AFB, TN and McKinley Climatic Lab (MCL) at Eglin AFB, FL. Continued design/construction of FY 2017 SLEPs Facilities Acquisitions for Restoration and Modernization (FARM) contracts. Continue award of contracts for additional SLEP Task Orders (TOs) to be executed during FY 2018-19 facilities outages. Complete programmed SLEPs effort at MCL facility at Eglin AFB, FL. Build new munitions operating location for the Holloman High Speed Test Track (HHSTT). Begin to modernize Landing Gear Test Facility (LGTF) utility room. Replace (second of five) LGTF Test Machine servo valves, accumulators, and hydraulic hoses. Refurbish 168i dynamometer and 120 MOD dynamometer south carriage cylinder. Replace second of six hanger doors on the large hanger. Begin refurbishment of National Radar Cross Section (RCS) Test Facility (NRTF) Radar Target Scatter (RATSCAT)		114.823	120.289	130.492

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019
Central Measurement System (RCMS). Refurbish NRTF Calibration Pit. Building upgrades for the Central Inertial and Global Positioning System (GPS) Test Facility (CIGTF). Continue planning for HHSTT South 5 thousand foot restoration project. FY 2019 Plans: Continue execution of the three remaining AEDC SLEPS to restore and modernize the PWT, VKF, & ETF infrastructure. Continued design/construction of FY 2018 SLEP efforts using Facilities Acquisitions for Restoration and Modernization (FARM) and other contracts. Continue award of contracts for additional Service Life Extension Projects (SLEPs) Task Orders (TOs) to be executed during FY 2019-2020 facilities outages. Continue modernization of the Landing Gear Test Facility (LGTF) utility room. Replace (three of five) LGTF Test Machine servo valves, accumulators, and hydraulic hoses. Data acquisition improvements to the LGTF 120 MOD dynamometer operator GUI. Replace the third hanger door on the large hanger. Continue refurbishment of National Radar Cross Section (RCS) Test Facility (NRTF) Advanced Measurement Systems (RAMS) Central Measurement System (RCMS). Continue refurbishment of NRTF Calibration Pit. Continue building renovations for Central Inertial and Global Positioning System (GPS) Test Facility (CIGTF) and Holloman High Speed Test Track (HHSTT). Rainfield repairs at HHSTT. Begin HHSTT South 5 thousand foot restoration project. During FY19, initiate repairs due to infrastructure failures to MCL, ARC Hypersonics Project, and National Full-Scale Aerodynamics Complex (NFAC). FY 2018 to FY 2019 Increase/Decrease Statement: \$10.203 million increase from FY 2018 to FY 2019 due to increased restoration and modernization repairs due to infrastructure failures for MCL and for National Full-Scale Aerodynamics Complex (NFAC), and the ARC Hypersonics Project along with a decrease from FY 2018 to FY 2019 due to partial completion of Service Life Extension Projects (SLEPs) projects at MCL facility at Eglin AFB, FL and at AEDC.				
Title: Facility restoration and modernization at 412 TW Description: Facility restoration and modernization at the 412 TW. FY 2018 Plans: Continue effort to restore and modernize Benefield Anechoic Facility (BAF) components. Continue to: modernize anechoic chamber 40 ton hoist to increase capacity above 100 tons, fire pumps, generator, UPS Connectivity for avionics simulators, 400 HZ frequency Converter, and installation of DAC pitfall protection and repairing electrical substation. FY 2019 Plans: Phase 1 Chamber Deluge System Replacement/Upgrade, Aircraft power upgrade; Phase 2 Shielded 270 VDC and Seal Radio Frequency (RF) Enclosure in DAC bldg. 1030; G-19 Test Equipment Accountability Upgrade bldg. 1030; repair shielded door SEC		8.021	12.171	26.527

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C. Accomplishments/Planned Programs (\$ in Millions)										FY 2017	FY 2018	FY 2019
RF Chamber for the Benefield Anechoic Chamber, bldg. 1030; bathroom renovations for bldg. 1020; repair/replace water line from bldg. 5780 to bldg. 5790; C-A-N Power upgrade; expand garage bay for bldg. 9509; modify room 136 to hard wall in bldg. 1440.												
FY 2018 to FY 2019 Increase/Decrease Statement: \$14.356 million increase from FY 2018 to FY 2019 due to replacing the Radar Absorbing Material (RAM) in the Benefield Anechoic Facility (BAF) at Edwards AFB.												
Accomplishments/Planned Programs Subtotals										134.111	135.507	162.216
D. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost	
• RDTE 06 PE 0604256F: Threat Simulator Development	21.377	35.405	34.256	-	34.256	46.393	42.925	29.444	29.977	Continuing	Continuing	
• RDTE 06 PE 0604759F: Major T&E Investment	64.538	82.874	91.844	-	91.844	181.663	164.005	142.090	82.003	Continuing	Continuing	
• RDTE 06 PE 0605807F: Test and Evaluation Support	676.417	678.289	692.784	-	692.784	719.900	726.015	760.319	737.765	Continuing	Continuing	
• RDTE 06 PE 0605978F: Facility Sustainment - T&E Support	28.091	28.720	28.888	-	28.888	29.424	29.935	30.555	31.112	Continuing	Continuing	
Remarks												
E. Acquisition Strategy N/A.												
F. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.												